

Amendment and Response

Applicant: Mark Shu et al.
Serial No.: 10/792,186
Filed: March 3, 2004
Docket No.: M190.148.101 / P-11480.00
Title: SUTURE LOCKING ASSEMBLY AND METHOD OF USE

REMARKS

This is responsive to the Non-Final Office Action mailed June 4, 2007. In that Office Action, the previously issued Restriction Requirement between Group I (claims 1-31 and 51-53) and Group II (claims 32-50) was maintained. Claim 2 was rejected under 35 U.S.C. §112, second paragraph. Claims 1-11, 13-31, and 51-53 were rejected under 35 U.S.C. §102(b) as being anticipated by Purdy et al., U.S. Patent No. 5,562,729 (“Purdy”). Claim 12 was rejected under 35 U.S.C. §103(a) as being unpatentable over Purdy.

With this Response, claims 32-50 have been canceled; claims 1-3, 5, 6, 8, 9 and 30 have been amended; and claims 54-58 have been added. Claims 1-31 and 51-58 are pending in the application and are presented for consideration and allowance.

As a starting point, it is respectfully noted that many of the claim rejections under 35 USC 102 set forth in the Office Action are incomplete. As described below, many of the claimed features are not present in the cited art, and no analysis of why the claim is being rejected is provided. As such, it is respectfully submitted that in the event the Examiner determines that a second Office Action is necessary, it would be improper for this second Office Action to be made final in that the current Office Action does not fully examine all claims.

35 U.S.C. §112, Second Paragraph, Rejection

Claim 2 has been amended to clarify that the suture segment is positioned between the rim and suture band, thereby obviating the rejection under 35 USC §112, second paragraph.

Claims 2, 3, 6, 8, 9, and 30 have been amended for reasons unrelated to patentability to address unintentional, grammatical concerns.

35 U.S.C. §§102, 103 Rejections

In rejecting claim 1 as being anticipated by Purdy, the Office Action views the “suture locking assembly” of FIGS. 34-37 as including the stent ring 202 as the claimed “rim” and the suture (unnumbered) used in mounting the suture ring 176 to the stent ring 202 as the claimed “suture band”. Further, the Office Action views pre-assembly of the suture ring 176 to the stent

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ring/rim 202 as being the claimed “first position” and final assembly of the suture ring 176 to the stent ring/rim 202 via the suture as being the claimed “second position”. Applicant respectfully disagrees.

As amended, claim 1 recites that the suture locking assembly is configured to securely maintain a suture segment that is circumferentially pulled relative to at least one of the flanges from a first position to a second position. The purported suture locking assembly of Purdy does not teach a corresponding configuration. Rather, in the “first position” (pre-assembly) of Purdy, the “suture segment” (i.e., the suture ring 176) cannot be securely maintained by the “suture band”. Conversely, in the “second position” (final assembly), the suture segment/suture ring 176 cannot be circumferentially pulled relative to stent ring/rim 202 (or the flanges 204). In other words, at no point of assembly of the suture/suture band of Purdy relative to the stent ring/rim 202 can a suture segment be pulled circumferentially from a first position to a second position, and be securely maintained in the second position. Thus, the structure of the “suture locking assembly” of Purdy does not anticipate the structural configuration of claim 1, such that amended claim 1 is allowable over Purdy.

Claims 2-31 depend from claim 1 and thus, for at least the above reasons, are allowable. Addition distinctions exist, and are not addressed or examined in the Office Action.

For example, claim 4 recites that the rim defines a plurality of recesses. The Office Action fails to identify any corresponding features in FIGS. 34-37 of Purdy, and none exist. Complete examination of claim 4 is respectfully requested. Claim 5, as amended, depends from claim 4 and thus is further allowable for at least these same reasons.

Claim 7 similarly recites a plurality of segments, with each segment defining a recess. The Office Action fails to identify any corresponding features in FIGS. 34-37 of Purdy, and none exist. Complete examination of claim 7 is respectfully requested.

Claim 10 recites that the rim and suture band are each a closed ring. The wound suture of Purdy, applied in the Office Action as being the claimed suture band, is not a closed ring. The Office Action fails to provide any examination of this feature of claim 10. Complete examination of claim 10 is respectfully requested.

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Claim 16 recites that the suture locking assembly is configured to be positioned adjacent a sewing ring of the heart valve repair device. These features of claim 16 are not specifically examined in the Office Action; in fact, these features are not taught by Purdy as the purported “suture locking assembly” of Purdy is the sewing ring of the heart valve repair device. Complete examination of claim 16 is respectfully requested.

Claim 20 recites a plastic cover attached to the suture locking assembly opposite the rim. The Office Action fails to identify any corresponding features in FIGS. 34-37 of Purdy, and none exist. Complete examination of claim 20 is respectfully requested.

Claim 21 recites that the suture band is formed of a metallic material. These features of claim 21 are not specifically examined in the Office Action. In fact, the purported suture band of Purdy (i.e., the suture used to mount the suture ring 176 to the stent ring 202) is decidedly not formed of a metallic material. Complete examination of claim 21 is respectfully requested.

Claim 26 recites that the rim and the suture band are each arcuately shaped. These features of claim 26 are not specifically examined in the Office Action. In fact, the purported suture band of Purdy (i.e., the suture used to mount the suture ring 176 to the stent ring 202) is simply a flexibly strand of thread, and thus cannot define a shape, let alone be “arcuately shaped”. Complete examination of claim 26 is respectfully requested.

Claim 30 recites that the suture band defines an engagement section including a connection body flanked by an outflow cut and an inflow cut. The Office Action fails to identify any corresponding features in FIGS. 34-37 of Purdy, and none exist. Similarly, claim 31 recites that the suture band further defines at least one lateral stop rib. The Office Action fails to identify any corresponding features in FIGS. 34-37 of Purdy, and none exist. Complete examination of claims 30 and 31 is respectfully requested.

With respect to the rejection of independent claim 51 as being anticipated by Purdy, the Office Action provides no explanation of how the features of claim 51 are taught by Purdy. Simply stated, claim 51 is not anticipated by Purdy. Complete examination of claim 51, as well as claims 52 and 53 depending therefrom, is respectfully requested.

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Newly Presented Claims

Newly presented claim 54 depends from claim 1 and thus for at least the above reasons is allowable. In addition, claim 54 recites that a perimeter shape of the first flange differs from a perimeter shape of the second flange. Support for this language is found, for example, at FIGS. 32-34b and 36-37c. The flanges 204 of the stent ring/rim 202 of Purdy have identical perimeter shapes, as do all other embodiments. Thus, claim 54 recites additionally allowable subject matter.

Newly presented claim 55 depends from claim 1 and thus for at least the above reasons is allowable. In addition, claim 55 recites that the first flange forms a first pattern of radial indentations and the second flange forms a second pattern of radial indentations, with the first pattern differing from the second pattern. Support for this language is found, for example, at FIGS. 32-34b and 36-37c. The flanges 204 of the stent ring/rim 202 of Purdy do not form radial indentations; further, no other embodiments of Purdy teach or reasonably make obvious the features of claim 55. Thus, claim 55 recites additionally allowable subject matter.

Newly presented claim 56 depends from claim 1 and thus for at least the above reasons is allowable. In addition, claim 56 recites that the first flange forms a plurality of recesses and a plurality of grooves, with a radial depth of the recesses being greater than that of the grooves, and at least one of the grooves being interposed between at least two of the recesses. Support for this language is found, for example, at FIGS. 32-34b and 36-37c. The flanges 204 of the stent ring/rim 202 of Purdy do not form any recesses or grooves; further, no other embodiments of Purdy teach or reasonably make obvious the features of claim 56. Thus, claim 56 recites additionally allowable subject matter.

Newly presented claim 57 depends from claim 1 and thus for at least the above reasons is allowable. In addition, claim 57 recites that the rim forms a plurality of recesses, and that each of the recesses are non-symmetrical. Support for this language is found, for example, in FIGS. 32-33a. The stent ring/rim 202 of Purdy does not form any recesses, let alone non-symmetrical recesses; further, no other embodiments of Purdy teach or reasonably make obvious the features of claim 57. Thus, claim 57 recites additionally allowable subject matter.

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Newly presented claim 58 depends from claim 57 and thus for at least the above reasons is allowable. In addition, claim 58 recites that the recesses are each defined by a leading surface and a trailing surface, and further that an angle of extension of the surfaces relative to a lateral edge differs. Support for this language is found, for example, in FIG. 33a. The stent ring/rim 202 of Purdy does not form any recesses, let alone recess surfaces of differing extension angles; further, no other embodiments of Purdy teach or reasonably make obvious the features of claim 58. Thus, claim 58 recites additionally allowable subject matter.

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CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 1-31 and 51-58 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1-31 and 51-58 are respectfully requested.

No fees are required under 37 C.F.R. 1.16(b)(c). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Response should be directed to Timothy A. Czaja at Telephone No. (612) 573-2004, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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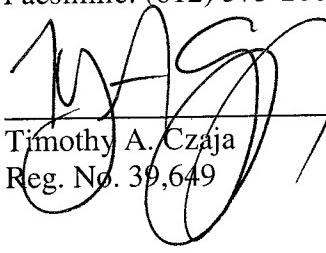
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